Claims

1. An isolated polypeptide comprising an amino acid sequence which has at least 70% identity to the amino acid sequence of SEQ ID NO:2 over the entire length of of SEQ ID NO:2.

2. An isolated polypeptide as claimed in claim 1 in which the amino acid sequence has at least 95% identity.

3. The polypeptide as claimed in claim 1 comprising the amino acid sequence of SEQ ID NO:2.

4. The isolated polypeptide of SEQ ID NO:2.

5. A polypeptide comprising an immunogenic fragment of a polypeptide as claimed in any one of claims 1 to 4 in which the immunogenic activity of the immunogenic fragment is substantially the same as the polypeptide of SEQ ID NO:2

6. An isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide that has at least 70% identity to the amino acid sequence of SEQ ID NO:2, over the entire length of SEQ ID NO:2; or a nucleotide sequence complementary to said isolated polynucleotide.

7. An isolated polynucleotide comprising a nucleotide sequence that has at least 70% identity to a nucleotide sequence encoding a polypeptide of SEQ ID NO:2, over the entire coding region; or a nucleotide sequence complementary to said isolated polynucleotide.

8. An isolated polynucleotide which comprises a nucleotide sequence which has at least 70% identity to that of SEQ ID NO:1 over the entire length of SEQ ID NO:1; or a nucleotide sequence complementary to said isolated polynucleotide.

9. The isolated polynucleotide as defined in any one of claims 6 to 8 in which the identity is at least 95%.

10. An isolated polynucleotide selected from:

(a) a polynucleotide comprising a nucleotide sequence encoding the polypeptide of SEQ ID NO:2;

(b) the polynucleotide of SEQ ID NO:1; and

(c) a polynucleotide obtainable by screening an appropriate library under stringent hybridization conditions with a labeled probe having the sequence of SEQ ID NO:1 or a fragment thereof;

or a nucleotide sequence complementary to said isolated polynucleotide

11. An expression vector or a recombinant live microorganism comprising an isolated polynucleotide according to any one of claims 6 - 10.

12. A host cell comprising the expression vector of claim 11 or a membrane thereof expressing the polypeptide of claim 1.

13. A process for producing a polypeptide of claim 1 comprising culturing a host cell of claim 12 under conditions sufficient for the production of said polypeptide and recovering the polypeptide from the culture medium.

14. A vaccine comprising an effective amount of the polypeptide of any one of claims 1 to 5 and a pharmaceutically acceptable carrier.

15. A vaccine comprising an effective amount of the polynucleotide of any one of claims 6 to 10 and a pharmaceutically effective carrier.

16. A vaccine comprising an effective amount of antigen presenting cells, modified by in vitro loading with a polypeptide of any one of claims 1 to 5, or genetically modified in vitro to express a polypeptide of claim 1 and a pharmaceutically effective carrier.

17. A vaccine as claimed in any one of claims 14 to 16 which additionally comprises a TH-1 inducing adjuvant.

18. A vaccine as claimed in claim 17 in which the TH-1 inducing adjuvant is selected from the group of adjuvants comprising: 3D-MPL, QS21, a mixture of QS21 and cholesterol, and a CpG oligonucleotide.

19. An antibody immunospecific for the polypeptide or immunological fragment as claimed in any one of claims 1 to 5.

20. A method for screening to identify compounds which stimulate or which inhibit the function of the polypeptide of any one of claims 1 to 5 which comprises a method selected from the group consisting of:

(a) measuring the binding of a candidate compound to the said polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof by means of a label directly or indirectly associated with the candidate compound;

(b) measuring the binding of a candidate compound to the said polypeptide (or to the cells or membranes bearing the polypeptide) or a fusion protein thereof in the presense of a labeled competitior;

(c) testing whether the candidate compound results in a signal generated by activation or inhibition of the said polypeptide, using detection systems appropriate to the cells or cell membranes bearing the polypeptide;

(d) mixing a candidate compound with a solution containing a polypeptide of any one of claims 1 to 5, to form a mixture, measuring activity of the polypeptide in the mixture, and comparing the activity of the mixture to a standard; or

(e) detecting the effect of a candidate compound on the production of mRNA encoding said polypeptide and said polypeptide in cells, using for instance, an ELISA assay.

21. A method for the treatment of a subject by immunoprophylaxis or therapy comprising *in vitro* induction of immune responses to a molecule of any one of claims 1 to 5, using *in vitro* incubation of the polypeptide of any one of claims 1 to 5 or the polynucleotide of any one of claims 6 to 10 with cells from the immune system of a mammal, and reinfusing these activated immune cells to the mammal for the treatment of disease.

22. A method as claimed in claim 21 wherein the treatment is for ovarian or colon cancer.

23. An agonist or antagonist to the polypeptide of claims 1 to 5.

24. A compound which is:
(a) an agonist or antagonist to the polypeptide of claims 1 to 5;
(b) isolated polynucleotide of claims 6 to 10; or
(c) a nucleic acid molecule that modulates the expression of the nucleotide sequence encoding the polypeptide of any one of claims 1 to 5;
for use in therapy.

25. A process for diagnosing a disease or a susceptibility to a disease in a subject related to expression or activity of the polypeptide of any one of claims 1 to 5 in a subject comprising:
(a) determining the presence or absence of a mutation in the nucleotide sequence encoding said polypeptide in the genome of said subject; and/or
(b) analyzing for the presence or amount of said polypeptide expression in a sample derived from said subject.

26. An isolated polynucleotide selected form the group consisting of:
(a) an isolated polynucleotide comprising a nucleotide sequence which has at least 70% identity to SEQ ID NO:3 over the entire length of SEQ ID NO:3;
(b) an isolated polynucleotide comprising the polynucleotide of SEQ ID NO:3;
(c) the polynucleotide of SEQ ID NO:3; or
(d) an isolated polynucleotide comprising a nucleotide sequence encoding a polypeptide which has at least 70% identity to the amino acid sequence of SEQ ID NO:4, over the entire length of SEQ ID NO:4.

27. A polypeptide selected from the group consisting of:
(a) a polypeptide which comprises an amino acid sequence which has at least 70% identity to that of SEQ ID NO:4 over the entire length of SEQ ID NO:4;

(b) a polypeptide in which the amino acid sequence has at least 70% identity to the amino acid sequence of SEQ ID NO:4 over the entire length of SEQ ID NO:4;

(c) a polypeptide which comprises the amino acid of SEQ ID NO:4;

(d) a polypeptide which is the polypeptide of SEQ ID NO:4; or

(e) a polypeptide which is encoded by a polynucleotide comprising the sequence contained in SEQ ID NO:3.

28. A live vaccine composition comprising an expression vector or recombinant live micro-organism according to claim 11.